

ABSTRACT OF THE INVENTION

The invention provides a composition comprising a diverse population of reagent ligands attached to a solid support and a diverse population of reagent antibodies specifically bound to the reagent ligands. The ligands can be peptides, oligosaccharides, oligonucleotides, or organic molecules. The invention additionally provides methods of determining an epitope in a sample contacting a composition comprising a diverse population of ligands attached to a solid support and a diverse population of antibodies specifically bound to each of the ligands with a sample; and detecting the antibodies bound to the diverse population of ligands. The invention further provides methods of diagnosing a disease, identifying a potential therapeutic agent, and mapping accessible epitopes of a polypeptide using invention compositions.